

THREE MEN AND THEIR CONTRIBUTIONS TO BANKNOTE SECURITY ENGRAVING

This program is about the exploits of three gentlemen who devoted part of their lives trying to perfect an anti-counterfeiting device that could be used on banknotes and other securities. It was no mystery that great rewards could be gotten by the person who could devise the fool-proof method to combat the counterfeiter. The abundance of rouses during the 1800's trying to make a living by passing phoney paper on unsuspecting people prompted the great mechanical minds of the times to try to meet this challenge. This problem manifested itself worldwide but was mostly felt in the industrialized nations of England and the United States. The phrase, "necessity is the mother of invention" could not be more appropriate for these times. In order to be absolutely succinct on this subject would be to completely understand the genius of these three men and how they applied it to their calling. To be able to think into the future and in reverse and to be able to mix art with mechanics and metallurgy to a common end requires a level of knowledge beyond my capabilities of understanding or relating. I can though, lay out what I have observed while studying this subject, make suggestions and ask for your input in order to help solve the mysteries that will unfortunately remain.

..... JACOB PERKINS.....

((Jacob Perkins)) Mr. Perkins (1766-1849) was the first banknote engraver to use mostly steel plates in place of copper. He also devised a method to mechanically duplicate an engraved steel plate to be used after the first one wore out. Previously, all printing plates had to be copied by hand. The small differences in engraving that would show up in hand duplicated plates gave cover to those making unauthorized copies. Mr. Perkins fashioned a steel roller which he then softened with the aid of heat, rolled it under ample pressure over the hard steel engraved plate to pick up the impression which was now in relief. He then re-hardened the roller and proceeded to impress that on a different flat soft steel plate. The soft steel plate then was hardened by this process so exact duplicate plates could be made at will. This process is called siderography and produced a stereotype product in the form of a printing plate which when duplicated will always be exact to the original.

He started out in Newburyport at about the turn of the 18th century, worked in Philadelphia for a short period of time with other engravers and eventually moved to England where he tried to introduce his method to the Bank of England. It was no coincidence he was met there with disdain by one Sir William Congreve who in his advisory capacity at the bank squelched the advances of Perkins. It seems that Congreve was at that time trying to get his own invention (notes made by his compound printing plate & press) also approved by the bank. To say that Perkins was just an inventor would

be selling him short. During the first 25 years of this country Perkins held nearly 1% of all the patents issued in the U.S.

((Hillsborough Bank \$10.00)) The earlier Perkins' notes (1800-1809) had an abundance of open space. However the basics of removable slugs were in use. Look closely. Is this note made up from an impression of many smaller die slugs or is it an impression from a single steel plate? As far as I can ascertain, no banknote plates of Perkins design whether in whole (looking much like the note shown here) or in part (as described in many publications, made up of many smaller sections and held together by a steel frame) have ever been discovered.

((Suffolk Bank \$5.00)) The open space on this note now has lines of micro-printing (Suffolk Bank Suffolk Bank Suffolk Bank) and (Five Dollars, repeated) adding more anti-counterfeiting muscle to this later (1810-1850) style note. The Stereotype Steel Plate (the four impression plate used for the front of the note) is a conglomeration of smaller plates, (some say 57, others 44) tightly held together in a steel form, from which a print may be drawn. The slugs bearing the name of the bank and town could be removed at will and substituted with those of another bank easily enabling his presses to flood all of New England with papers which today collectors find at best hideous, boring and very un-artistic.

((Franklin & Concord Notes)) Notes with denominations \$1.00 through \$4.00 were required by law to be of this general oval appearance. Note the similar but slightly different designs of the two notes. One benefit of the stereotype plate was that different slugs with different impressions could be interchanged giving one bank's notes a little different look, which is really not the direction one wants to go in, if counterfeiting is the problem. The Concord note shows an American Bank Note company monogram in the white space at the upper left. This means that the plate for this note was being prepared for use again in 1858 or -59 by the newly established association, long after these plates were considered obsolete.

((Gloucester Bank \$10.00)) The introduction of the Check Plate back (about 1809) seems to me to be a somewhat redundant exercise. Was it to protect the Stereotype Plate note which in itself was supposed to be counterfeit proof? Be that what it may, it was used by quite a few banks. Although it is fairly easy to find counterfeit Perkins' Plate notes I have never seen a note sporting a counterfeit Check Plate back! Proper use of this plate requires the suspect note to be folded along a design edge and after matching it to the proper check letter, butting it up to the backside of the known true note and seeing if the designs meld. The Patent Steel Stereotype Check Plate is the name given to the backs of these notes such as the one seen on this slide.

((Patent Steel Stereotype Check Plate)) This odd looking plate was made with six separate pieces of steel clamped together. After engraving they were separated by five plain pieces of steel causing the breaks in the designs. This plate was then used to print the note or sheets of notes.

((New Hampshire Union Bank)) Although similar in some respects to the Perkins' notes, this note has a flavor apart from Jacob Perkins' work. It is believed that his brother Abraham and Abraham's son Nathaniel continued with the engraving business after 1818 when he departed for England and it is possible this note bears an imprint from him. Eventually the Perkins firm was taken in by the new New England Banknote Company which came out publicly in 1833 and many of their plates started appearing with the New England Bank Note Co. imprint. Haxby lists only one note from this bank having the Perkins Patent Steel Plate (PPSP) imprint. The others are listed as Patent Stereotype Steel Plate (PSSP), which must be in error as I have examples of two others.

((Close-Up of Perkins imprint.)) While still being a stereotype plate product this note artistically is quite different from the usual Jacob Perkins' products. I have been able to find notes from only three banks with this imprint. In two instances Haxby attributes their date of origin to the 1830-40s, well after Jacob's departure for England. In the other (a R.I. note) the date is handwritten 1821.

((Rochester Bank \$2.00)) By the 1840s these notes began to lose their mundane appearance. More and more artistic vignettes began to appear. Now notice the addition of the New England Banknote Co. imprint on the left while retaining the PSSP imprint on the right.

((Farmers Bank \$1.00)) Also by the 1840-50s New England Banknote started to place their imprint more prominently on the note and even did away with the PSSP imprint.

((Atlas Bank \$2.00)) According to the issue date, this plate was in use at least until 1850. Artistic flourishes began appearing, replacing the geometric humdrum designs.

.....SIR WILLIAM CONGREVE, 2nd Bart.

((Sir William Congreve)) A Baronet is a man holding the hereditary British title of honor ranking just below "Baron". The son of that man would be the Second Baronet. Sir William, the Second Baronet (1772-1828) was a lot like Jacob Perkins. He was a genius with many patents to his credit. One of his most famous were the rockets the British Navy sprinkled over Fort Mifflin during the War of 1812 that Francis Scott Key took issue with. Another was the rolling ball clock. Imitations of this can be found advertised on eBay. Sir William's invention of the Compound Printing Plate, a wonderful anti-counterfeiting tool was for use in producing stamps, lottery tickets, bottle labels and paper money. His obsession was to sell it to the Bank of England. The Bank rejected both his and the Perkins' proposals. The Bank of England had a peculiar problem with counterfeit money. They would not redeem any counterfeit Bank of England notes, no matter what! But, other banks would immediately redeem counterfeit notes on their banks when presented to them thus making it easier to apprehend the counterfeiter. Consequently the fake notes on the Bank of England were instead passed

on to other unsuspecting recipients, keeping them in circulation longer and making it harder to track the makers of those notes. Another of his inventions was called “Triple Paper”, which he also tried to sell to the bank of England. With this, three separate very thin papers were pressed together while wet, making one sheet. The center sheet had designs and colors appearing as watermarks which could not be duplicated or tampered with without noticeable damage occurring to the sheet. It seems he gave up on promoting the triple paper invention after the Bank of England also squelched that idea.

((Example of Congreve Printing)) The colorful design seen here could actually be printed with one pass from the plate. Congreve’s plate was made in this manner: A flat piece of metal was stamped out with various designs leaving a metal stencil. Then a different molten metal was poured over it filling the depressions and covering the plate. After solidifying, the plate was pulled apart leaving both a female and male component which when rejoined resulted in a flat surface which then could be engraved on. The designs were then applied as if the two-part plate were one. When finished they were pulled apart, placed on separate areas of the press, inked in different colors, then rejoined. The impression was then drawn resulting in a beautiful multicolor design.

((Another Congreve design)) Similar worm-like patterns printed like the ones printed in orange would eventually be used on banknotes printed in the U.S. The company of Whiting & Branston actually carried out much of the Congreve inspired engraving and printing in England. The Congreve Patent Check Plates you will soon see were probably never even envisioned by Congreve. His method could have been applied in various venues of engraving. It was the method of producing them that I believe was the intended patent. The design you see here is on the back of a British bank note.

((Congreve India Document)) Official and valuable papers needed protection from counterfeiting. Congreve’s Patent seemed to fit the bill. This example is from India and is evidently a valuable document.

((Whiting & Branston)) Congreve’s interest in plate making and printing was somewhat transient. He tired of this endeavor and in about 1824 passed his rights on to the engraving firm of Whiting & Branston. After his death in 1828 his widow married Mr. Whiting.

((Congreve Patent CHECK Plate)) This impression that now appears on the back of the Duxbury, Mass \$3.00 note is typical for notes produced in the U.S., in about 1833.

.....ABEL BOWEN.....

((Abel Bowen)) Born in New York State in 1790, worked in Boston and died in 1850. Bowen engraved wood plates for illustrations, book plates, maps, and scenes of nautical interest. He also engraved a series of prints depicting sea battles during the War on 1812.

He was a well known engraver around Boston but the reason for his involvement with the Congreve Patent Check Plate designs on the backs of some New England issues of Perkins Stereotype Steel Plate notes still remains a mystery.

Sometime previous to 1833 he must have obtained the rights to print in the Congreve manner. I have identified thirteen banks that issued notes with his back plate designs. Not all of these are listed as such in Haxby. In 1809 the Mass. Legislature mandated that all banks use the Perkins Stereotype Steel Plate front design on notes because of their immunity to the counterfeiting fever. And they added that all bills of the \$5.00 denomination be printed with the Perkins' Check Plate back. Was it possible that the law was repealed or altered, at least in part allowing the Congreve/Bowen back design to enter into the picture? Is it also possible that Bowen saw an opportunity and bought into it? Could he have had this engraving method filed or patented in this country and sold the rights to New England Banknote who it seemed more likely to have the expertise to produce this type of note? It seems that he or the New England Banknote Company made the compound plates required for the Congreve process and then affixed the designs on the backs of the four note Perkins Plate sheets. It seems that Bowen or New England Banknote were hoping to get approval to replace the drab old Perkins back plate with something a little more colorful. While some of this seems a bit far-fetched there still is no known history of Bowen's previous involvement with this type of engraving.

Engravers or engraving companies almost always placed their imprint (name) on the plate to show just who's work it was. Nowhere in Haxby or other banknote reference is any mention of a Bowen imprint on these banknotes. Why? Bowen did such a good job at concealing it, it was never discovered until this research stumbled upon it. The Congreve/Bowen experiment seemed to be very short-lived, 3 years at best, and possibly only one. In England the last of the Congreve presses (which printed from compound plates) went out of use in the 1920's. Even up to that time they were used very sparingly.

((Three Nahant Notes)) The whole experiment of using the Congreve Plates as an anti-counterfeiting device took place during the years 1833-1834/35. The notes of the Nahant Bank (with Congreve Check Plate backs) while still rare, seem to be the most prolific in the marketplace today. When Congreve plate notes are offered for sale at all, the Nahant notes seem to appear more often than notes of any other bank. These Nahant notes show some of the earlier back designs made by Bowen. Nahant notes are also known with the modern Congreve design hand dated through at least June 11, 1835. As with notes from other banks having these unusual backs, both Congreve and plain backs have been recorded. Note the front and back of the top note. This note has been trimmed too closely leaving no border on the reverse bottom of the note.

((Nahant Bank \$500.00)) The Bowen imprint appears. "Designed and engraved by Abel Bowen: Boston". The brown border seemed a likely place to place an imprint. Here it can barely be seen. The New England Bankers custom of trimming their notes very close to the design resulted in many imprints being cut away. This I assume was Bowen's first try in placing his imprint. (The face of the Nahant Bank \$500.00 is a stock image). Previous to the discovery of this imprint it could have been assumed that New England

Banknote could have executed the designs for these particular banknotes. That still remains a possibility.

((Bank of Newbury)) The front and back of this note makes a handsome picture. The back plate is very clear.

((Bank of Newbury \$5.00)) This back plate has the Bowen imprint away from the border allowing it to be noticed with ease. I can only assume this would have been his second try in placing his imprint where it could be read, even if it still required magnification. Mentioned for the first time, in this program, is the observance of “white line” engraving. Notice that the body of the design is engraved in repeated fashion and appears on the note as white undulating and crisscross lines. How could that be if these lines were engraved into the plate causing them to retain ink? The answer as Eric Newman pointed out to me is that the original engraved plate could have been duplicated by casting, a method causing the engraved lines and certain text to appear in white as these elements of the cast plate would now be raised and the ink would be wiped off of them prior to printing leaving the ink to inhabit the low areas of the plate. Another method would be to cut away the relief image now above surface on the transfer roller, harden it and roll it to the plate.

((Fall River Bank of Troy \$5.00)) This is another example of a banknote with a Perkins’ front and a Congreve/Bowen Back. These backs have never appeared on American paper money other than Patent Stereotype Steel Plate notes. Perkins’ type banknotes of a later vintage occasionally had ornate backs, but why not Congreve backs?? This is a question not easy to answer.

((Essex Bank of Guildhall)) Note the filing statement. “Entered according to act of Congress in the year 1833 by Abel Bowen in the clerk’s office of the District Court of Massachusetts.” This followed by the plate “#7” and “Designed and Engraved by Abel Bowen: Boston.” This modern style plate and imprint claiming copyright protection appeared in 1833 and with it the designs changed dramatically and his work appeared more professional and precise. Could this have been the time New England Banknote took over the production?? Could the less professional looking notes have been produced at the Newburyport office? New England did claim in their ads that they had in their new Boston shop, the most up-to-date machinery. It seems that Bowen was either working with or for the Perkins’ crew and New England Banknote for a time. Whatever the reason, the use of the Congreve Plate was very short lived as previously mentioned.

((Duxbury Bank \$3.00)) This specimen note is one of the finest known notes with the Congreve back plate. Every detail of the engraving can clearly be seen! The filing statement as seen in the strip on the plate could have been done with the aid of a pantograph that can enlarge or diminish the letters to the desired dimension. Remember the Lord’s Prayer on the point of a pin? That probably was done with the aid of the pantograph. With this note the imprint of the New England Bank Note Company first appears under the left most punch hole.

((Duxbury close-up)) In this close up, the filing statement and imprint can easily be seen. Mention of these statements up until now has not been disclosed in any publication. This research has probably brought these to the public light for the first time.

((Taunton \$2.00 Face Plate)) Could the date in 1833 be instrumental in finding out why following filing statement on Plate #6 has been defaced? Additionally, notes printed well after the 1833-35 era again carried the old Perkins Check Plate backs. Why did Bowen's experiment fail? That's another question to explore. (This image from a Stacks catalogue)

((Taunton Bank \$2.00 Back)) This beautifully engraved back of the Taunton \$2.00 note is plate #6 from Bowen's selection. The numbered designs are all different but two or more of the same plate # could have different colors. (Image from a Stacks Catalogue).

((Taunton \$2.00 Reverse Close-up)) An interesting observation with this slide is that the filing statement that appears on the same line as the Bowen imprint but to the left and all of the way to the left border seems to have been engraved over in order to make it illegible. What happened here? Did the Massachusetts District Court deny Bowen's copyright application?? Why did Bowen obliterate this statement?

((Various other Congreve Backs)) All of these backs appear on Nahant notes. To date I have identified 9 different Congreve styles of back plates for all notes. Eric Newman owns a frame with 8 different specimen back designs.

((List of banks bearing Congreve Backs)) So far I have identified thirteen banks as having used the Congreve back. Haxby also lists other banks as having "check plate" backs including the Nahant Bank which actually has a Congreve back and the Atlas Bank which has a decorative design. So, it is possible some of those listed having check plate backs will turn out to really have Congreve/Bowen Backs.

((Boston Bewick Co)) Our mystery man, Mr. Bowen was quite busy during the year 1833, the date of his copyright filing. That year he also illustrated and published a new copy of the Mother Goose Rhymes. Coincidentally, he applied for a copyright for this also. On his title page appears, "Entered according to an act of Congress in 1833 in the Clerk's office at the District Court of Massachusetts". Sadly, his personal library was lost in a fire in the building his new company, The Boston Bewick Co., a illustrating and publishing company at 47 Court St. in Boston was housed. The flames may have consumed forgotten information of his days as a banknote engraver.

((T.R. Hawley 25c)) We don't very often see such colorful scrip notes as this one. Was it purposely made to imitate the Congreve process?? I don't know. But, it wouldn't be too hard to just print the three inks in three different applications. (This is an image from the Internet site, "Sellitstore").

Some of the information that has been presented is just my opinion. More research must be done to come up with a definitive explanation for all these processes. For more information on these subjects please refer to Dave Bowers' Book, Obsolete Paper Money, 1782-1866 and the Eliz. Harris Monographs, Sir William Congreve and his Compound Plate Printing and Jacob Perkins, William Congreve and Counterfeit Printing in 1820. Thanks to Eric Newman who's intense interest in trying to understand these processes swept me along so together we were able to come up with some answers that previously escaped us altogether.This whole exercise has been an enlightening experience.....

((THE END))